School Shop

vol. IV no. 1
September, 1944

New York State Trains Technicians
by W. N. Fenninger

John Dewey on Vocational Education

Radius Wheel Dresser
by Jon P. Adams
and M. B. Goodwin

Visual Aids in the Shop
by Earl L. Bedell

On the cover: The student working at the cylindrical grinder is enrolled in the Troy, N. Y., State Technical Institute, the forerunner of a state system of technical institutes. For more details, see page 7 inside.

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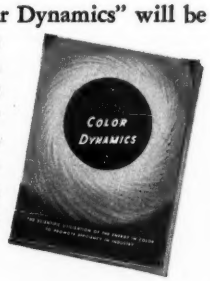

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School Shop

FOR INDUSTRIAL ARTS & VOCATIONAL EDUCATION TEACHERS

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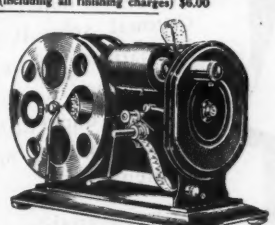

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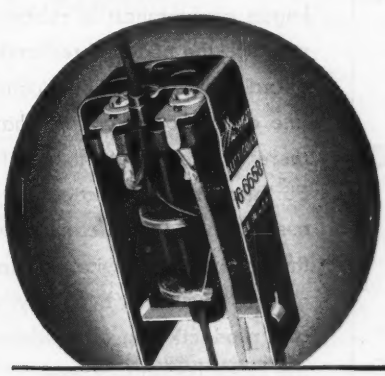

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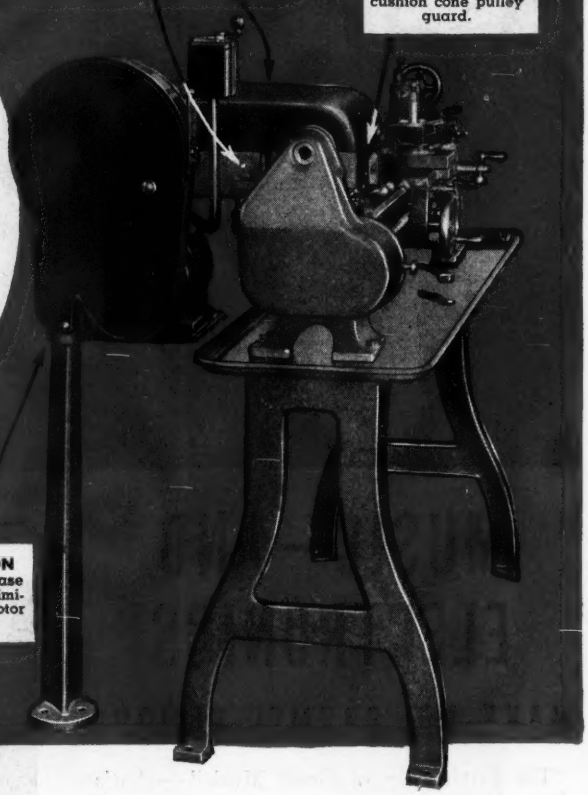

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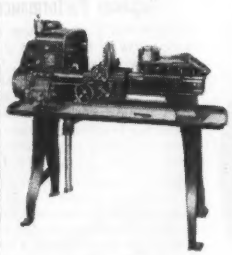

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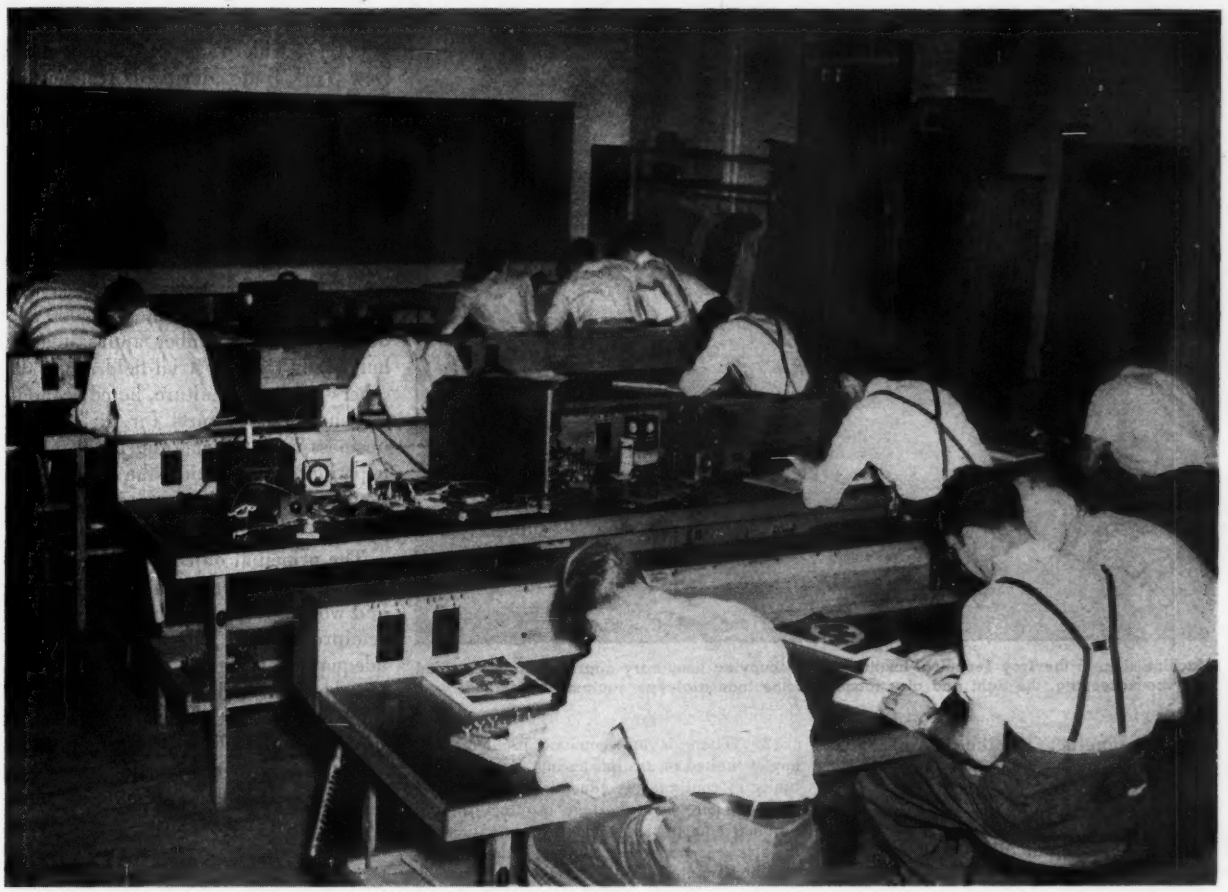


Class in electronics and radio at Schenectady Technical Institute. This institute is now housed in temporary quarters. After the war a new building will be built to serve the Albany-Schenectady-Troy area.

New York State Trains Technicians

A DESCRIPTION OF A PLAN FOR TECHNICAL INSTITUTE EDUCATION

BY *W. N. Fenninger*

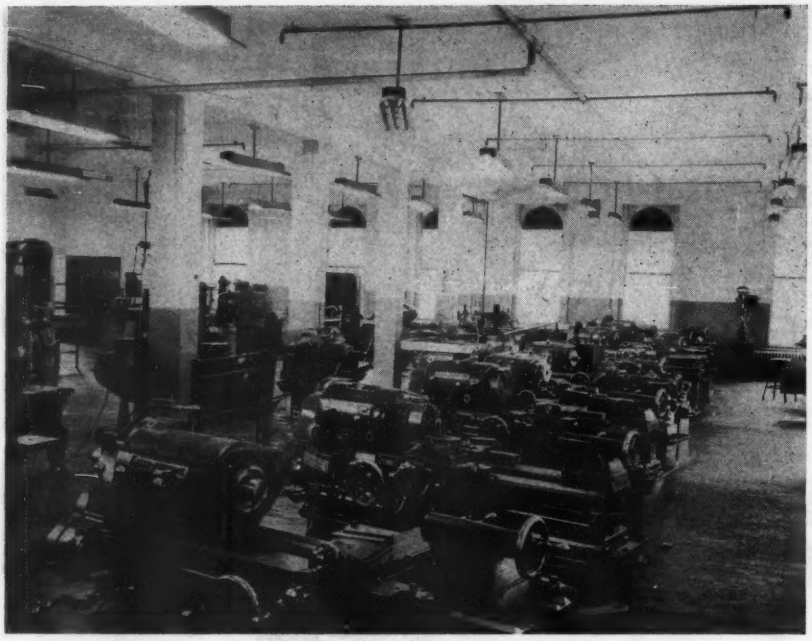
New York is a leader among the states in planning a program of education for industrial occupations on a technical institute level. Architects are now at work drawing up plans for the proposed new buildings. The New York program is a particularly interesting development in view of the recognized need for area vocational schools on a nation-wide basis. W. N. Fenninger is Supervisor of Industrial and Technical Education, State Education Department, Albany, New York.

ABOUT a decade and a half ago the Society for the Promotion of Engineering Education conducted a study of technical institute education. Among other things, their report indicated that for every engineering college graduate needed by industry, there was a need for from two to four technicians and junior engineers for which one- or two-year technical institute courses were appropriate. Furthermore, that report showed that the supply of engineering college graduates at that time was about equal to the demand, but, while the need for technical institute graduates was greater than for college trained engineers, the supply was very much less.

Although this study pointed out the need for a great increase in technical institute education, it was published at about the beginning of the depression of the nineteen thirties. Except in a few states, little was done to supply the need for technical institute education. In New York State, for example, in 1937 in four of the state schools of agriculture two-year posthigh-school courses were started in electricity, industrial chemistry, automobile mechanics, watchmaking, and architectural drawing and building construction. The facilities were sufficient to take care of only about 300 students.

When the industries of the country were called on to increase greatly the production of war materiel, the shortage of technicians and junior engineers became acute. Both the public schools and the engineering colleges, through the ESMWT courses, did excellent work in an attempt to supply the need quickly.

As a means of assisting in long-range planning for technical institute education, a little over a year ago Dr. J. C. Wright, U. S. Assistant Commissioner for Vocational Education, appointed a committee representing labor, management, and education to study the need for technical education of less than college grade. Dr. L. A. Emerson, Professor of Industrial Education at Cornell University, acted as chairman of the working subcommittee. This committee found that the demand for technical institute trained personnel varied from one in-



Machine shop in the Troy Technical Institute now occupying temporary quarters. Note the good housekeeping, the light and airy room, and the industrial-type equipment installed.

dustry to another, but the data obtained indicated that for a wide variety of industries there is a potential demand on the average for about five times as many persons with technical institute training as with an engineering college education. This report is now in press.

In addition to the demand by industry for technicians and junior engineers, consideration should be given to the desires and abilities of youth. On this subject, the Regents Plan for Postwar Education in the State of New York states,

"From all sources there is a strong pressure to recognize, in postwar planning, three basic needs:

(1) "The increasing demand for education beyond the high school on the part of American youth,

(2) "The special educational needs of employed adults, and

(3) "The educational demands of the returning veteran and war worker."

In this state approximately 40 percent of the high-school graduates continue their education. Approximately half of these go to degree-granting institutions, while the others go to schools of nursing, private business schools, and other proprietary schools, frequently paying a relatively high tuition for the instruction received. On the subject of further training for high-school graduates, the Regents Plan states,

"From preliminary data, the following propositions are clear:

(1) "There is at the present time a lack of opportunity in higher education for the 120,000 boys and girls graduated annually from the secondary schools of the State.

(2) "There is an economic problem; the boy of limited means has an inadequate opportunity to continue his education.

(3) "There is a shortage of practical and terminal education devoted to preparation for the arts, sciences, and technologies that may be suitably completed within a two-year program.

"The excellent system of private colleges and universities needs strengthening; it needs, in addition, a supplementation to take care of the situation outlined above."

All of the high schools of the state, both public and private, have maintained college preparatory courses. These have been called vertical education for more education. Only the larger school systems have provided any appreciable horizontal education for life, that is, a preparation for earning a living as well as living a life.

It is not feasible for every high school in the state to provide trade or technical education. Neither can any great number of the local boards of education provide posthigh-school trade or technical education.

Recognizing that industry needs an increasing number of persons with technical training of less than college grade, and recognizing that there is a lack of opportunity in further education for many of the 120,000 boys and girls graduated annually from the secondary schools of the state, as a part of their plan for postwar education, the Regents have recommended a marked expansion in the facilities and educational offerings of the six agricultural and technical institutes located at Alfred, Canton, Cobleskill, Morrisville, Delhi, and Farmingdale; a wider range of training at the New York State Maritime Academy at Fort Schuyler in the Bronx; and, in addition, the establishment in the up-state area of nine new institutes, seven of them regional in character and two special institutes. The two special institutes are in aeronautics and retail business management. The total facilities recommended for the up-state area will accommodate approximately 20,000 students. Of this number approximately half are in the industrial field, while the others are in agriculture, home economics and practical arts for girls, retail business management, and maritime occupations. In addition, the Regents recommended eleven institutes in New York City to accommodate 16,000 students.

The principal objective of these institutes is the preparation of young men and women for positions of technical or semiprofessional character for which adequate training may be given in two years beyond high school. The curriculums of the institutes will include work in three fields: (1) laboratory and shop work needed to develop the skills and technics used in the occupation; (2) the basic science, mathematics, drawing, and art which are needed to carry out the activities of the occupation; and (3) personal and civic arts designed to further the general welfare and understanding of the students. Instruction in English, social science, and other liberal subjects is considered essential to personal growth and citizenship.

Since the major objective of these institutes is to prepare for occupational competency, the curriculums to be offered in these institutes are being determined by a survey of industry's need for technically trained personnel. The State Education Department assisted in the national survey referred to above. The fields covered by this state for the national survey were the occupations in electricity with emphasis on electronics, both in communications and industrial electronics, and also the building industry. A limited supply of the list of electrical jobs is available on request to the writer. In addition to the intensive study of these fields, a broad study is being made of the long-range needs of industry in the state.

Among the fields in which instruction is planned are: electricity, with majors in electrical construction and maintenance, industrial electronics, and communications; architectural drawing and building construction; industrial chem-

istry; mechanical technology, with majors in metalworking, machine and tool drafting and design, foundry practice and heat treatment, metallurgy and strength of materials; automative technology; aeronautics; refrigeration; automatic heating and air conditioning; watchmaking; petroleum technology; and mining. Others will be added as the survey of industry indicates the need for specialized training.

These institutes are not planned as junior colleges in which the instruction is a duplicate of the first two years of regular four-year colleges. The courses are terminal and not preparatory to further education. However, the Regents Plan states, "Since it is important not to close the door to further education on the part of students displaying appropriate academic interests, arrangements will be made for accrediting courses taken in an institute if presented later at a college or university, in so far as the work can be considered interchangeable."

The courses in the institutes will be offered tuition free to residents of any part of the state. However, when a student leaves home for his education the cost of room and board is the major item of expense. Hence, instead of establishing two or three very large institutes to accommodate the students, there are ten institutes outside of New York City planned on a regional basis. By following out this plan, terminal education will be brought to within commuting distance of the majority of high-school graduates.

The Maritime Academy and the Institute of Aeronautics are not planned as regional institutes. The cost of providing adequate equipment and facilities for instruction in these fields is too great to permit more than one school in each of these phases of transportation. In other fields, such as watchmaking, the placement opportunities do not warrant a course being given in more than one school.

Another factor in determining the location of the new institutes is the proximity to centers of industry. Because many boys and girls leave school for industry with little or no vocational training, there is a growing need for evening courses for employed workers. Furthermore, many war workers will need to be retained for peacetime occupations. Because of the speed with which technological changes take place, there will be a continued demand for evening courses in the large industrial centers.

Because of this need for evening classes, as well as because there are annually about 8,000 high-school graduates in the area, a new institute is planned for the Capital District. For about two years, the state has been operating war-training schools in Schenectady and Troy. These are occupying rented buildings. Almost from the opening of these schools, they were utilized nearly to capacity in the evenings for technical and trade courses supplementary to industrial employment. As the preemployment day war-training enrolment has fallen off, the state has made these two schools available for the retraining of veterans.

The experience gained in the operation of these two technical institutes will be of great value in planning the postwar technical institute for the Capital District.

In order that the time required to put into effect the Regents Plan for expanded technical institute education may be reduced to a minimum, architects are now engaged in drawing up plans for the new industrial buildings in three of the existing agricultural and technical institutes. As rapidly as the requirements can be determined by the State Education Department, plans will be drawn for other buildings.

The Regents Plan for Postwar Education also includes two-year courses in agriculture, home economics and practical arts for women, courses in retail business management and other fields, but these are not included in the scope of this article.

In the words of Deputy Commissioner L. A. Wilson, whose vision was largely responsible for the plan for technical institute education,

"One lesson that we have learned again as a result of the war is that our youth have proved to be our most valuable asset. Facing an exacting postwar world, we certainly cannot afford to waste the potential ability of any of our young people. Every youth is entitled to the education and training that will prepare him both for his economic as well as for his social responsibility as a selfsupporting citizen. The institute program will make it possible for many thousands of our high-school graduates to receive the education and training that will greatly enhance their opportunities for employment and enable them to assume larger responsibilities in the social and economic life of our state."

John Dewey on Vocational Education

VOCATIONAL and practical education was illiberal in Greece because it was the training of a servile class. Liberal education was liberal in Greece because it was the way of life enjoyed by a small group who were free to devote themselves to higher things. They were free to do so because they lived upon the fruits of the labor of an industrially enslaved class. Moreover, industry was carried on by routine apprenticeship in ways that were handed down from parents to children.

That the models and patterns followed by craftsmen achieved a high degree of aesthetic development should not be permitted to blind us to this fact. For it marks a striking contrast with the conditions of modern industry. Methods of work are now the result of the continuous application of science. Inventions, themselves the result of applications of science, are constantly encroaching upon ways of production that carry over routine and precedent. There was justification in existing conditions for the Greek who distinguished between activities that were the manifestation of rational insight or science and those that were the expression of irrational routine. But there is no excuse for such a view at the present time. There is now more natural science involved in the conduct of our industry than there is anything nearly resembling science in the conduct of our political and social affairs.

The problem of going ahead instead of going back is then a problem of liberalizing our technical and vocational education. The average worker has little or no awareness of the scientific processes embodied in the work he carries on. What he does is often to him routine and mechanical. To this extent the diagnosis the critics make of present vocational education is correct in too many cases. But their reactionary remedy involves fixation of just that which is bad in the present system. Instead of seeking an education that would make all who go to school aware of the scientific basis of industrial processes, they would draw the lines still more sharply between those who receive a vocational training, deliberately kept illiberal, and the much smaller number who enjoy a liberal education—after the Greek literary model. A truly liberal, and liberating, education would refuse today to isolate vocational training on any of its levels from a continuous education in the social, moral, and scientific contexts within which wisely administered callings and professions must function. (Reprinted by permission from *Fortune*, August, 1944.)

Coffee Table

BY *Ward Sager*

This excellent woodworking project is not beyond the abilities of students in advanced classes. The attractiveness of the finished product is enhanced by the care given to the finish, a point often disregarded in school shops. The author is Assistant Professor of Industrial Arts, Central Michigan College of Education, Mount Pleasant.

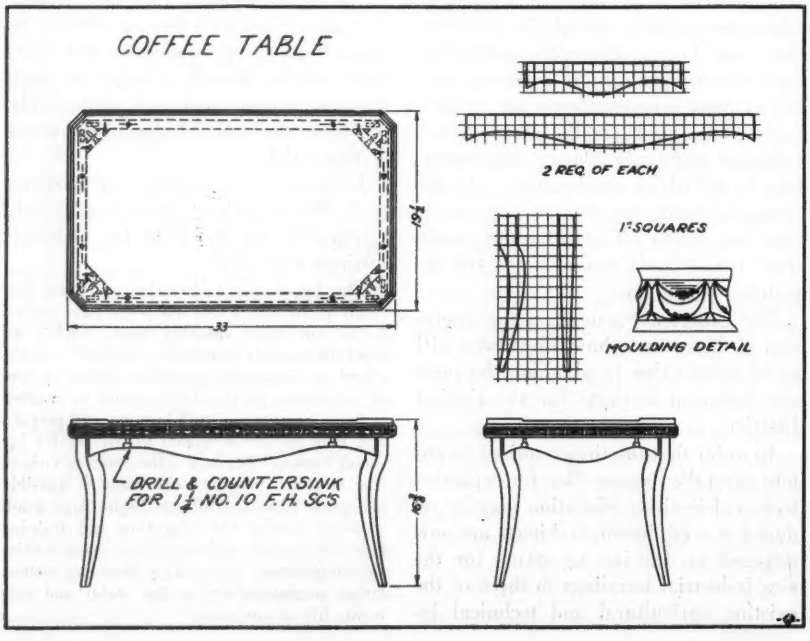
THE graceful lines of the coffee table shown in the photograph make it a piece of furniture that will fit in with almost any style of home furnishing. While construction of a table of this kind requires careful workmanship, no special skills are involved and it should not prove difficult for students in advanced shop classes where use of power woodworking machinery is permitted. The table shown was made from mahogany and gumwood, the top, moulding, and apron of mahogany, and the legs of gumwood stained to match. If Honduras mahogany is not available, the entire project could be made of gumwood or walnut. Philippine mahogany or birch finished with dark mahogany stain would also be satisfactory woods. Machine carved moulding, similar to that shown in the detail drawing, may be obtained from firms dealing in cabinet woods or from the Klise Manufacturing Company, Grand Rapids, Michigan.

The top is ¾" material, 18½" wide and 32" long. The corners are cut off on 45° angles 1¼" from each edge using either the circular saw or band saw. Approximately seven feet of ¼" x 1¼" stock is required for trimming around the top. It will be noted from the photograph that this edging is cut so as to project above the top ½" at the corners and ¼" along the sides and ends. The strips can be cut to shape on the band saw or jig saw and fastened around the edge of the top with glue and brads. The joints are mitered 22½°. The moulding is 1⅛" wide and is fastened in the same manner as the edge pieces.

For the apron, 2 pieces of stock ¾" x 3½" x 29" and 2 pieces ¾" x 3½" x 15½" are needed. The patterns for cutting these pieces to the shape shown in the drawing can be laid out by squares. Reference to the photograph will show that 22½° cuts on the ends of these pieces are necessary as the legs are set directly under the cut-off corners of the table top. Two holes for No. 10 wood screws are drilled through each piece and countersunk to a depth of ¾". In the final assembly these eight screws are used to attach the table top. The apron is joined to the legs with ¼" dowels, thus two ¼" holes must be bored in both ends of each piece. A doweling jig can be used for boring these holes and this operation should be performed before the ends are cut off on the 22½° angle.

The legs require stock about 1⅜" in thickness by 3" in width. They are taper sawed to 1¼" at the top and ¾" at the foot. The taper can be cut on the circular saw by use of a taper jig or the pieces can be marked off and sawed on the band saw and finished with a jack plane. A pattern for the curvature of the legs may be made from the detail drawing. In joining the ends and sides of the apron to the legs, careful workmanship is called for. As shown in the drawing, the apron is set in from the outer edge of the leg about $\frac{3}{16}$". The ¼" holes that are bored in the legs to receive the dowels must be accurately laid out and drilled at the correct angle. A simple jig can be easily constructed for holding the leg at an angle and the holes drilled on the drill press, or the angle of drilling can be determined and the angle maintained by holding a T-bevel square, adjusted to the proper angle, on the work while the holes are drilled with an auger bit. After a trial assembly shows that all joints fit properly and the frame is square, it may be glued and clamped, being careful to use as little pressure as required to draw the joints together.

The top is attached to the legs and frame with eight No. 10 wood screws, the holes for which are bored in the apron pieces as before noted. In addition, four corner blocks are cut and fastened with glue and wood screws to the frame and legs as shown on the top view of the drawing. If all pieces are smoothed with sandpaper before assembly, a final finish sanding with 00 sandpaper should produce surfaces ready for finishing. The table shown was finished in dark mahogany, one coat of wash shellac filler, and three applications of spar varnish rubbed between each coating and after the final coat with pumice and oil. Wax was applied to provide a dull luster and to protect the varnished surface.



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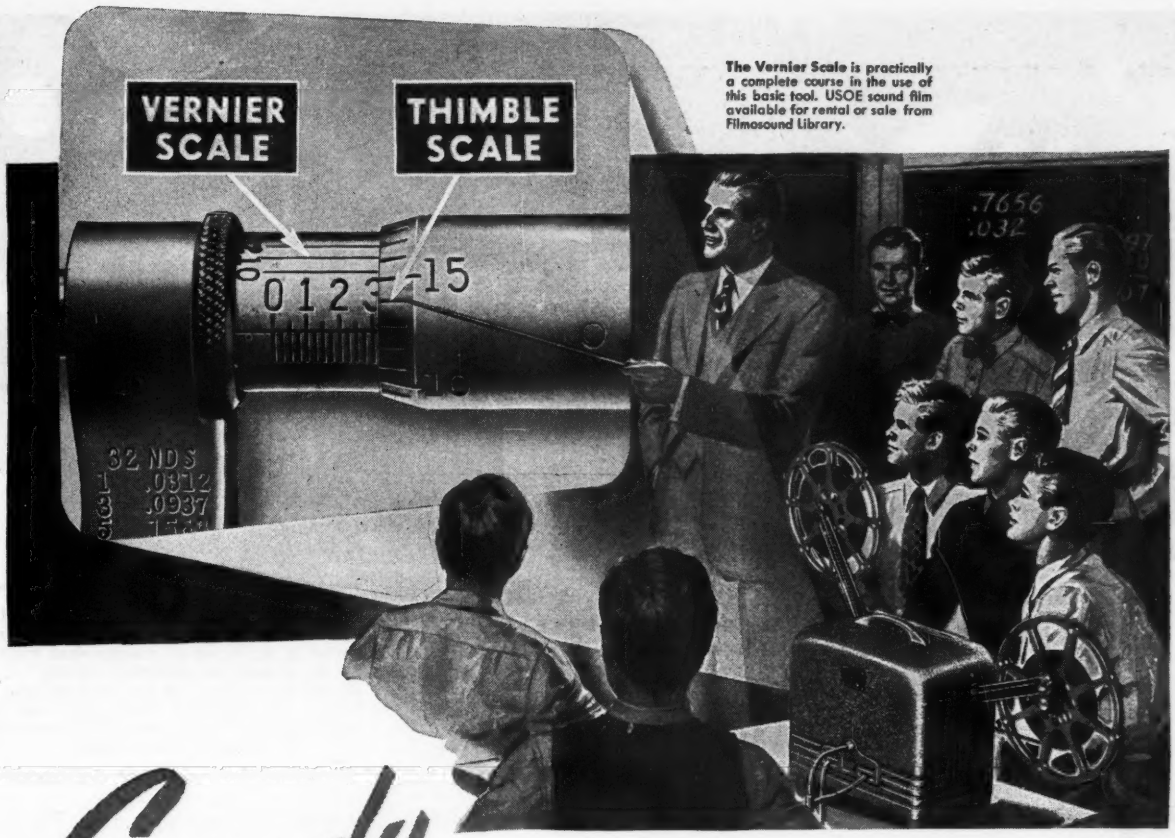

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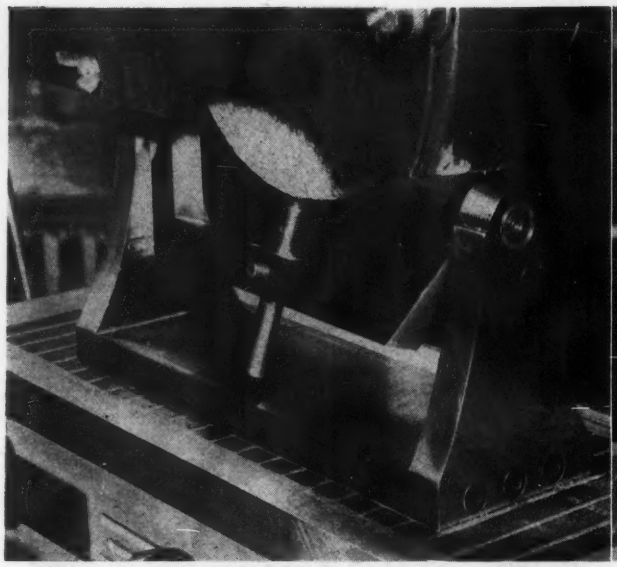
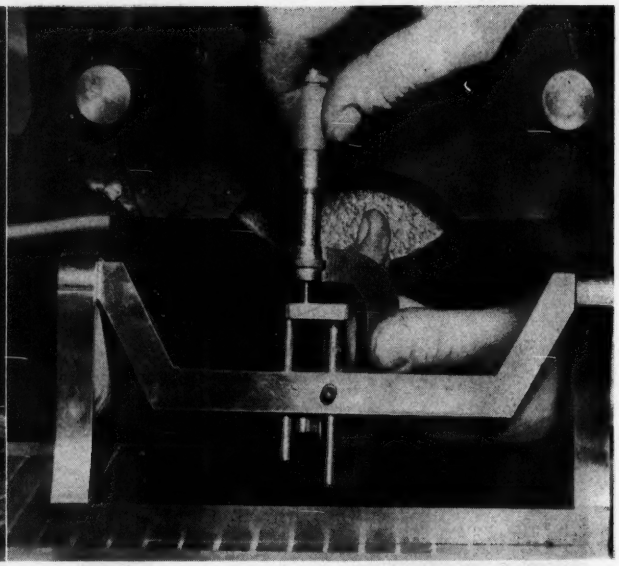




Radius Wheel Dresser

BY *Jon P. Adams* AND *Myron B. Goodwin*

With grinding increasingly important in industry and therefore in shop teaching, this fourth project in the series of machine-shop projects by the authors is particularly timely. J. P. Adams is in charge of the machine shop at Proviso Township High School, Maywood, Illinois, and Myron B. Goodwin teaches machine drawing in the school.

FORM grinding takes a prominent part in modern grinding practice. Many types of form tools may be ground on the surface grinder using the angular grinding fixture described in the April, 1944, issue of SCHOOL SHOP or the radius grinding attachment described in this article or a combination of the two. Because of the tremendous amount of grinding done in modern shops, the authors feel that schools should keep abreast of current industrial practices in their teaching.

Radius tools are of several designs. The one used at Proviso was selected because of its simplicity of design, ease of operation, and construction. If properly constructed, this tool is accurate in spite of its simplicity.

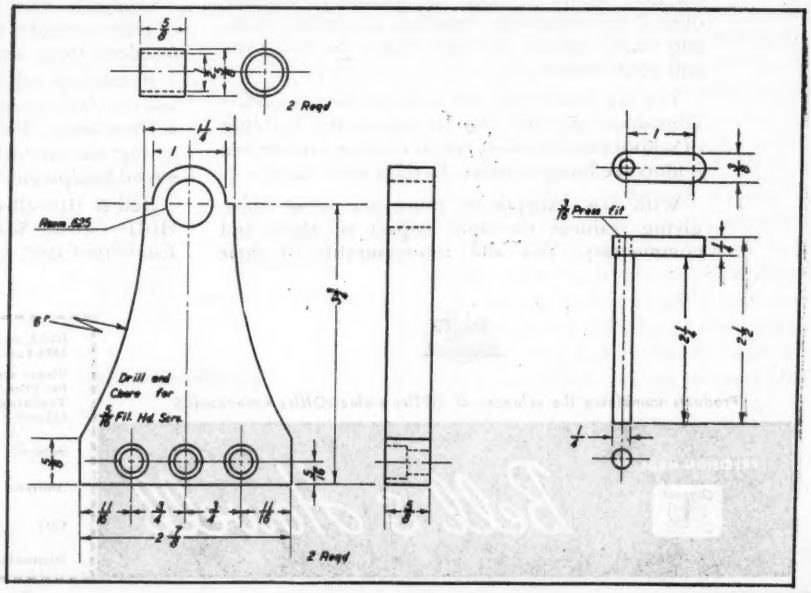
The details of construction will be omitted as the drawings are complete and selfexplanatory. However, a few details will be discussed for further clarification.

The base and trunnions may be changed to suit the builder; obviously the trunnions need not be made in the shape shown. The sides could be straight, but if the shape shown is used a more "professional" appearance will result.

It is not necessary to use the bronze bushings. However, they do interrupt the magnetic field and thus prevent the micrometer from becoming magnetized if the adjustments are made while the dresser is on the chuck.

The swinging arm on the tool pictured here was cut out on the DoAll contour saw. Lacking this machine it may be milled or shaped. The trunnions are then turned on the centers indicated in the drawing about .005" over size and then ground on the cylindrical grinder.

One dimension that must be held to extremely close limits is the distance from the center of the trunnions to the bottom of the swinging arm. This may be done by placing the two trunnions on "V" blocks with the bottom of the arm up. The arm is then clamped with parallel clamps to an angle plate to hold it square with the surface of the chuck. The bottom is then ground in this inverted position on the magnetic chuck. The distance from the center of the trunnions to the bottom of the arm is 2" and must be held to an accuracy of ± .0001 or less.



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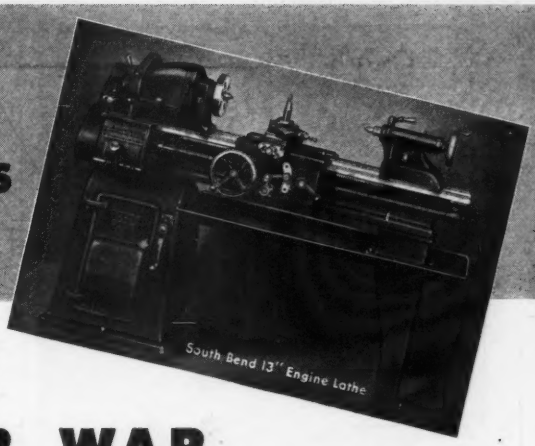

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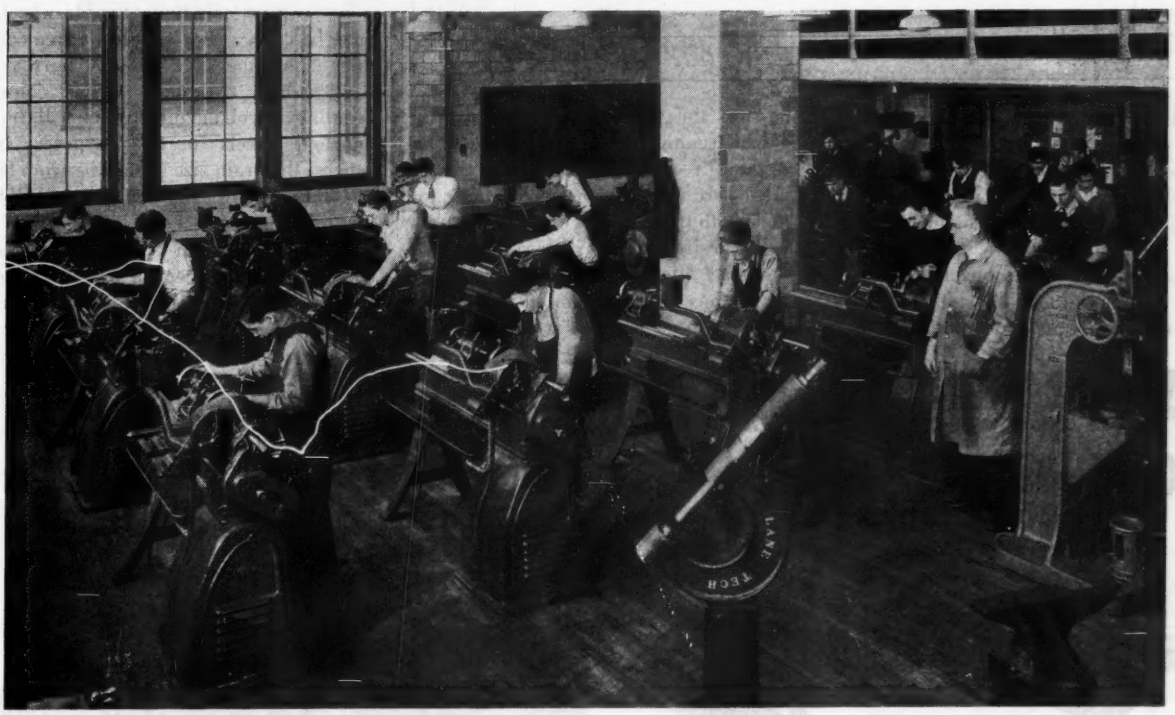

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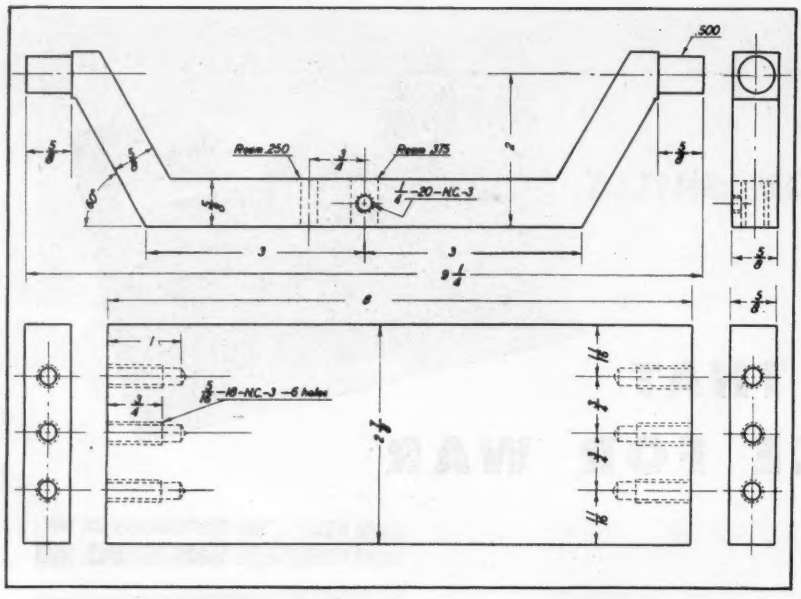

This distance may be checked by one of several methods. One method is to check with a vernier height gage with a .0001 indicator and Jo blocks. Another method is to clamp a ground parallel to the bottom of the swinging arm and measure with a micrometer the distance over the parallel to the side of the trunnion. If this method is used the thickness of the parallel and one-half the actual trunnion diameter must be added to the 2" reading. Bear in mind that an error here will be transferred to any job done with this tool. If extreme accuracy is not desired you may place the arm on a surface plate and measure the height to the face of the trunnion with a vernier height gage. This will give results accurate to .001".

The diamond is set with micrometer accuracy by means of a setting stop. The stop must also be accurately made and the ¼" hole for the pilot accurately reamed so that there will be no play between these parts.

The diamond is set on the tool by deducting the required radius from 2¼" (this is the distance from centerline to the bottom plus the thickness of the stop) and setting the result with a micrometer as shown in the photograph. This applies only to a male radius. In the case of a female radius, the radius required must be added to 2¼" and the result set as shown. In the latter case a diamond with a longer shank must be used.

To do form grinding, suitable wheels must be used. They should be free cutting so that the work will not burn yet hard enough to hold an edge. Most grinding wheel manufacturers will recommend wheels for this purpose. In general the grain size should be from 80 to 100 for rough grinding and up to 150 for finishing.

Note that in form grinding it is not necessary to grind with a wheel formed to grind the entire piece. It is some-

(Continued on page 26)

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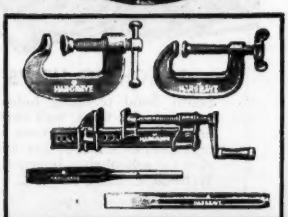

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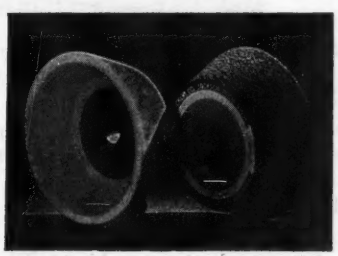

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Pupil Management

BY *T. A. Hippaka*

PROFESSOR OF INDUSTRIAL EDUCATION, IOWA STATE COLLEGE, AMES

ORDERLY pupil management, informally and indirectly attained, is essential in every effective learning situation. Efficient pupil management reduces to a minimum the so-called disciplinary cases among our learners. Disciplining and punishment never exist where pupil management results from an intelligent understanding of human beings and where their actions are interpreted in terms of human drives. Where the teacher has mastered preventive methods, discipline cases are cut to a minimum. The following are intended as aids to teachers in their management and control of a group of students:

1. There needs to be a place for everything and everything needs to be in its place. Here, of course, we have reference to supplies and equipment.

2. Adequate attention is given to the physical comforts of students, all of which involves light, heat, air, seating comforts, and work stations.

3. Preventing acute and strained situations from arising is always worth more than a pound of cure.

4. The rights of pupils need to be respected at all times.

5. Human behavior needs to be interpreted in terms of drives.

6. Teachers need to put themselves in the position of students quite regularly.

7. The teacher's personality and appearance are important and have a far-reaching influence.

8. We need to watch our voice and language.

9. It is important to start with pupil interests and to remember that it is also our duty to interest young people in activities important to a democracy even though such activities may be disagreeable in character.

10. Teachers should see to it that every pupil works to capacity.

11. An appropriate sense of humor is important.

12. Tact is essential.

13. Approval and disapproval are essential and should be appropriately and intelligently indicated to the learner.

14. Firmness and fairness must go together.

15. Sarcasm has no place in the learning situation.

16. Oftentimes personal counsel is essential.

17. *Authority needs to be used sparingly with dignity and fairness.*

18. Emotional stability must prevail on the part of the teacher.

19. Prejudice must be absent.

20. Sane, cooperative teacher-pupil planning is desirable. Here again, the pupil participates to capacity, naturally leaving many of the important decisions to the mature judgment of the teacher.

21. Definite, reasonable, purposeful assignments must prevail.

22. Pupils need to learn to think and act individually as well as collectively.

23. A good teacher feels the gist and drift of "public opinion" in his classes.

24. It is important to create the impression in the minds of students that the school and department are theirs. If everything is kept orderly and in good condition, they themselves are the benefactors of such effort.

25. We should practice democracy in every learning and management situation, always remembering that with freedom must go a participating sense of responsibility.

26. There must be no waste of supplies or misuse of equipment. Taxpayers and even students are quick to note this.

27. Even youngsters desire order in a learning situation and respect the teacher for insisting on having it.

28. Truthfully sell the importance of your work to the class. This is best done by radiating wholesome enthusiasm yourself.

29. Always resort to such workmanlike methods that you are in a position to convince your students that that is the way it is done in a work-a-day situation.

30. And finally, if you have to resort to punishment, it is well to remember the following:

a) You have failed with that individual as far as prevention is concerned.

b) The punishment needs to be meted out in such a way that the offender is deprived of something that is important but not fatal to him.

c) Through punishment we give expression to society's disapproval of a wrong act.

d) Through punishment we hope to deter others from committing similar acts.

e) We hope to reform the offender.

f) Before punishment is administered we should be certain that the pupil understands the wrongfulness of his act.

g) Let us be certain that no part of this treatment is unduly or inappropriately exhibited in public.

h) Regardless of how clever and efficient we are in administering punishment, the fact remains that it would have been much better if we had possessed sufficient foresight to have prevented the situation from ever arising in the first place.

"Can You Fix This?"

BY *Benjamin Gold*

BENSONHURST JUNIOR HIGH SCHOOL, BROOKLYN, N. Y.

THE tool panel seen in the illustration is my partial answer to the question in the title of this article. The rest of the answer is the work involved in doing those minor repair jobs every shop teacher is called on to do. Many of these jobs are from other teachers who have the complimentary but erroneous idea that the shop teacher can fix anything, and send the job to me with a note which reads, "Can you fix this for me, please?" These jobs run the gamut from reinserting a strap in a wristwatch to reforming the shuttle-retaining hook on a sewing machine. The tools and instruments shown on the panel are seldom used in connection with my regular planned class work, and under ordinary conditions they would be kept in a tool cabinet. I found this arrangement saved me many steps by having at hand the tools most always needed to do those odd jobs. Six pairs of pliers, including a pair of compound nippers, see the most service. The two screwdrivers are of different sizes and are seldom unmolested. The dental tweezers have seen the inside of a bottle of ink in search of a pearl, among many other jobs. The spring calipers have revealed the diameter of many strange objects. The set of files have rescued many a recalcitrant key from the salvage heap.

Of course, the desk top was dressed up for the picture, and is obviously posing. This is about how it looks every Friday afternoon after one of my pupils takes a brush to it.

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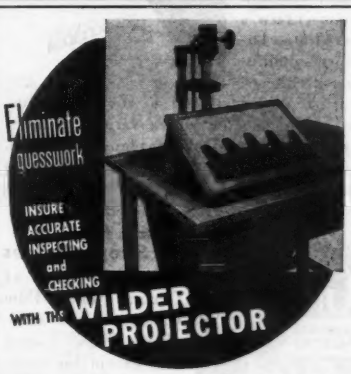

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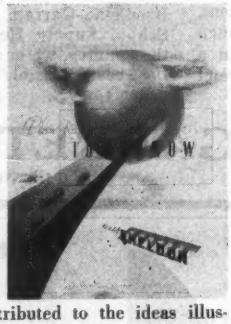
Bell & Howell Company of Chicago announces a new film on which two high-school teachers, in charge of visual aids and vocational training respectively, have collaborated. The film, *Essentials of Wood Turning*, shows the operation of a simple wood lathe by the scraping method, pointing out the usefulness of a knowledge of wood turning machinery.

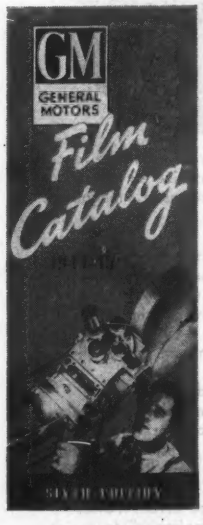
Available also from the Filmosound Library are films on aircraft work, covering the blanking of sheetmetal with hand snips and on the squaring shear, filing template metal, tube bending by hand, finish forming by hand, etc.; and films on machine shop work, including the engine lathe and its accessories, and cutter sharpening and the various technics involved.

For further information on the moderate sale and rental prices of these sound or silent films, write the Filmosound Library, Bell & Howell Co., 1851 Larchmont Ave., Chicago 13, Ill., *or check number 1 below.*

"Plan for Tomorrow"



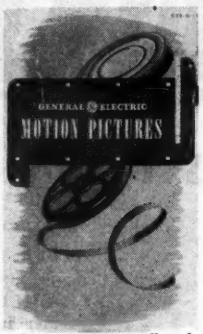
E. H. Sheldon & Company presents a new brochure which makes suggestions and asks questions with the aim of stimulating immediate thinking about the design and function of tomorrow's classrooms. Instructors, administrators, architects, and artist all contributed to the ideas illustrated in the booklet, and a variety of interesting and forward-looking plans are given. For your copy write E. H. Sheldon & Company, Muskegon, Mich., *or check number 2 below.*



Films for Use in Shop Classes

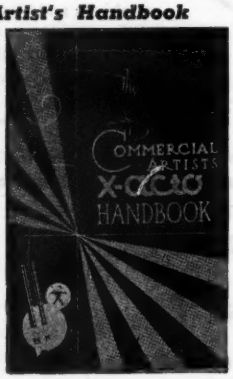
Sixth edition of General Motors Film Catalog is now available. Films, loaned free except for transportation charges, cover such subjects as the Diesel engine, its principle, its development and its effect on modern transportation; industrial developments possible after the war; car conservation through better driving and servicing; basic principles of television; automobile design; developments in modern standards of accuracy in measuring time, weight, and space; remote control, its principles and applications; use of technical training in the army; etc. For your copy of the catalog write to General Motors Corp., Broadway at 57th St., New York 19, N.Y., or to the Department of Public Relations, General Motors Corp., 405 Montgomery St., Rm. 1526, San Francisco, Calif., *or check number 3 below.*

General Electric Films



Films available from General Electric, on payment of the charges for shipping only, are listed in their new catalog. Films which tell the story of the electric transformer, which describe the operating principles of steam turbines, of the watthour meter, or of the many intricate electrical measuring instruments are only a few of those offered. Instructions for ordering are given at the rear of the catalog. Write to General Electric, Schenectady, N.Y., *or check number 4 below.*

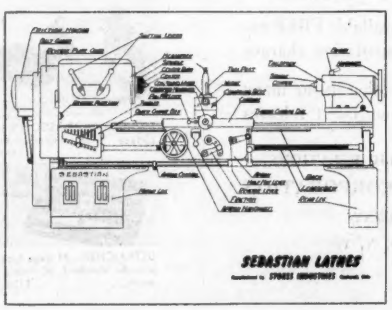
Commercial Artist's Handbook



Technics discussed and illustrated in the new handbook just published by X-acto Crescent Products Co. include: photo retouching, both negative and prints; air brush friskets; butt-patching of drawings; the use of transparent Ben Day screen sheets, and silk-screen work. Author Martin Prehn is an eminent commercial artist with many years of commercial and advertising experience. Book is available for 10c from X-acto Crescent Products Company, 440 Fourth Avenue, New York 16, N.Y., or by *checking number 5 below and enclosing 10c.*

Instructional Charts on Lathes

Stokes Industries, manufacturers of Sebastian lathes, offer an 8½" x 11" outline chart of a lathe, showing the major component parts of the machine. Suitable for classroom instruction, the illustration designates the major features which an instructor will refer to in the early stages of instructional courses. Limited numbers of the illustration are available free on request to Business Engineering Department, Stokes Industries, Suite 2010 Carew Tower, Cincinnati, Ohio, *or by checking number 6 below. Specify number desired.*



Lathes. The name of Stokes Industries, manufacturers of Sebastian lathes, was inadvertently left out of our June "Suppliers Directory." So that you may have complete information we are printing the listing below for clipping and insertion in its proper position in the June list:

Lathes
Sebastian Lathes
Stokes Industries
Cincinnati, Ohio

Army-Navy "E" has been awarded Sheldon Machine Co. of Chicago for excellence in war production of their lathes, basic equipment in Army and Marine mobile shops and on many Navy craft.

New Literature . . .

Burgess Vibro-Tool, a marking, engraving, and cutting tool useful in a variety of ways on special jobs, is fully described in the detailed circular available from Burgess Battery Company, 166 N. Wabash Ave., Chicago 1, Ill., *or by checking number 7 below.*

Use and care of hand tools are fully discussed and described in films on wrenches, pliers and screwdrivers, chisels, etc., prepared under U.S. Army Ordnance Supervision and available from the Plomb Tool Co. For full details write Plomb Tool Co., Box 3519 Terminal Annex, Los Angeles 54, Calif., *or check number 8 below.*

Diehl turret lathe No. 2, complete description and full specifications, are given in a bulletin available from the G. M. Diehl Machine Works, Wabash, Ind., *or by checking number 9 below.*

GEMCO multi-purpose shapers are described and illustrated in a new bulletin which gives complete specifications on 11 different machines. Write General Engineering & Mfg. Co., 1523 South Tenth St., St. Louis, Mo., *or check number 10 below.*

Starrett Precision Tools, steel tapes, dial indicators, and hack saws which are now being manufactured are listed in a booklet to be used in conjunction with their complete catalog No. 26. All other tools have been temporarily discontinued. Write the L. S. Starrett Co., Athol, Mass., *or check number 11 below.*

Each item listed above is numbered. Check the numbers of the items you want, and mail the coupon, properly filled in, to . . .

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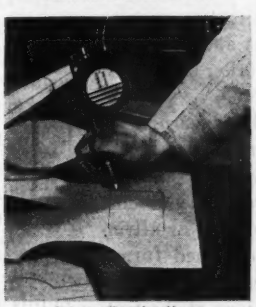

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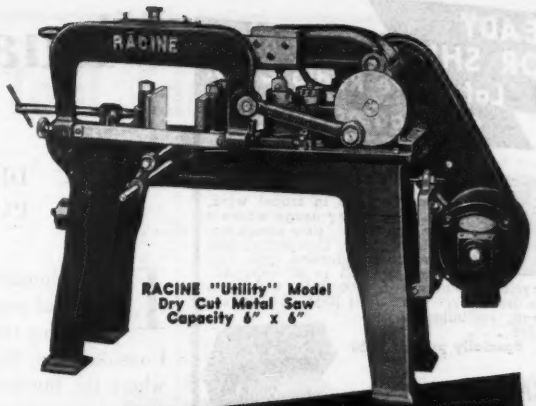

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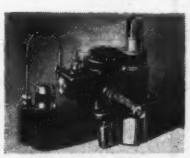

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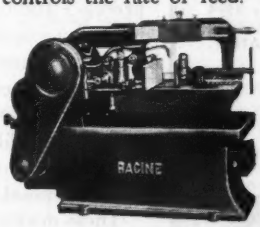

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Visual Aids in the Shop

BY *Earl L. Bedell*

DIRECTOR OF VOCATIONAL EDUCATION,
PUBLIC SCHOOLS, DETROIT, MICHIGAN

IT is axiomatic that war accelerates all social processes. Notably is this statement true of the present war. Consider the field of transportation, where the bomber has effectively shortened geographical distance to forecast a postwar era of commercial aviation.

In education, the increased use of such visual aids as the motion picture and the strip film has tremendously speeded up the educational process. This development was a direct outgrowth of the need for training large masses of unskilled men in the technical operations used in war-production industry and in the military occupations. Mechanized devices came to the fore in war-worker training programs to speed up the instructional process. The strip film and the motion picture have made a major contribution to the war effort. As a result of the extraordinary success of these forms of visual aid, there will undoubtedly be a more extensive use of them in the school programs of the future.

This development is inevitable because of the very nature of the teaching process. Teaching is a science. Therefore, teachers in practicing their science invariably utilize different devices to aid the learners. They use technics, methods, and tools for hastening the learning process. The use of accelerative devices in teaching is sound, for all instruction, in reality, short circuits learning by experience. Recognizing this fact, one readily realizes that the motion picture and the strip film are just added instructional means which invention has placed at the disposal of teachers.

These devices are tools of learning in much the same manner as the blackboard, the wall map or chart, and the like. The textbook is probably the most universally used and accepted of all instructional aids. Mimeographed forms, work sheets, assignment sheets, and charts are merely variations of the textbook and like these different physical facilities, visual aids are "aids" to instruction, but not substitutes for instruction. No responsible educator today would consider that these devices reduce the importance of the teacher.

Rather, teachers have discovered through the use of films that visual aids assist them in meeting and surmounting many obstacles in the way of effective instruction. Among others, there appear to be at least four important ways in which films aid learning, as follows:

1. *Immediate Comprehension.*—The presentation of learning materials on the screen results in immediate grasp of the facts and ideas projected.

2. *Perfected Concepts.*—When pupils view a picture of any given subject they visualize the material presented in terms of the total learning situation. A picture of a workman engaged in threshing grain is grasped as a whole so that the pupil has a full and complete understanding of the subject.

3. *Universal Understanding.* — The picture is a universal language. Pictorial art deals in images. Facts and ideas are visible in their organic relationships so that all pupils can share a common ground of understanding.

4. *Motivated Learning.*—The increased satisfaction which the pupil gets from pictorial presentation stimulates his interest in the materials which he is required to learn.

If films, however, are to make a major contribution as instructional aids, certain physical conditions or requirements are very important. Among those most essential, the following probably stand at the head of the list:

1. Films must be produced pictorially lucid and technically correct.

2. Classroom teachers must have reasonably good conditions for projection.

3. The projection equipment should be in the classroom available to the teacher, not in some central, relatively far removed distributing center requiring requisition for use.

4. Teachers must learn to use, to operate the equipment, and in turn teach pupils to operate it under their supervision.

5. To use films effectively requires careful lesson planning. Careful planning includes careful timing that the picture may be projected at the critical time in the learning procedure.

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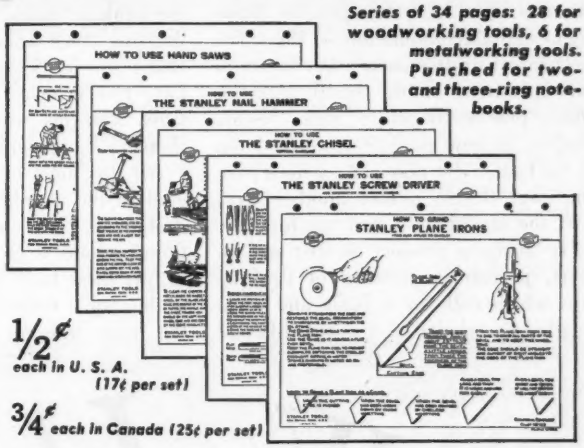

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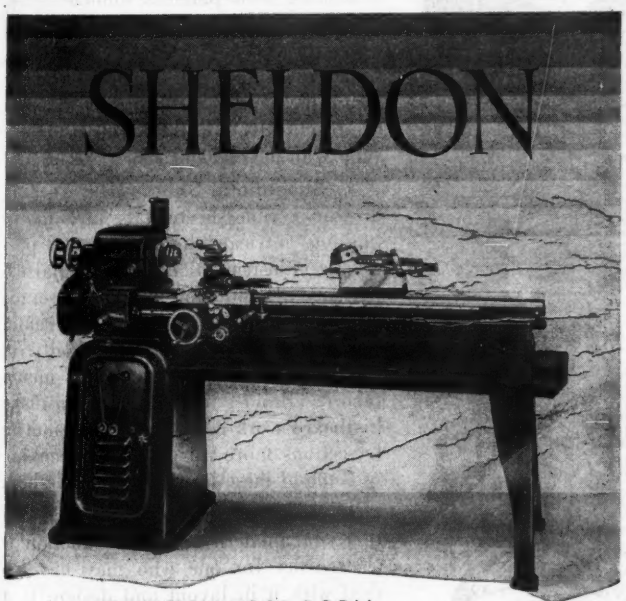

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Training for Draftsmen

BY *B. J. Stern*

The author contends that more emphasis should be given to shopwork in the training of draftsmen for industry so that they may have the basic trade knowledge required to do a good job in a variety of fields. B. J. Stern teaches at the Machine and Metal Trades High School, New York City.

TRAINING mechanical draftsmen in vocational schools is not merely a matter of teaching the elements of mechanical drawing and design. There is more to it than just the drawing of various combinations of lines. The mechanical draftsman is a key figure in our industries. In the small plant or office, practically every idea, design, project, or new product is worked out on his board. He may make a floor plan one day; design a tool another day; start the layout of a new machine the next; change a product design; and, in short, perform a number of drafting jobs which call for a basic and often detailed knowledge of a dozen different mechanical trades. Even in the large drafting office where he may specialize along one particular line, he still must have this information to cope successfully with his work and attain some measure of leadership.

All this must of necessity be considered in the training of the mechanical draftsman. The well equipped vocational school is in an ideal position to supply these basic trade knowledges. In setting up a course of study, then, for the trade training of draftsmen, it is vital that some work in at least the following shops be included when possible.

1. **Machine Shop.**—This is of basic importance. The student draftsman must have a working knowledge of the methods whereby metals are shaped and fashioned. He must have a firm grasp of machine-shop nomenclature and standard practices. Of value to him also are the elements of the heat treatment of metals, hardening, tempering, etc. By actual contact with the methods of manufacture he gains a greater appreciation of his role in the process than all the reading and explanation he can possibly be exposed to.

2. **Pattern Making Shop.**—For a grasp of the standard practices followed in making wood patterns, nomenclature, shrinkage rules, coring, finish allowances, etc. If a foundry is accessible, some molding and casting practice should be included. If not, then this can be graphically illustrated in a pattern shop with flasks, sand, etc.

3. **Sheetmetal Shop.**—The working of thin-section sheetmetals into multitudinous intricate shapes is a vital part of our industrial picture. By actual experience in producing some of these, the aspiring draftsman gains fundamental practice of great value, especially in these days of expanding aircraft manufacture. Besides this, nothing can make his board work in developments and intersections more alive than the making of some of these in the sheetmetal shop.

4. **Welding Shop.**—Experience with this vital modern tool of production is a necessity for one who may have to deal with it in layout and design. If a fully equipped shop is not available then a portable gas welding outfit should be provided as well as an electric welding set-up, if possible.

Of course, it is not at all necessary for the student draftsman to become highly skilled in any of these trades. It is enough if he learns the fundamental processes and can use this information

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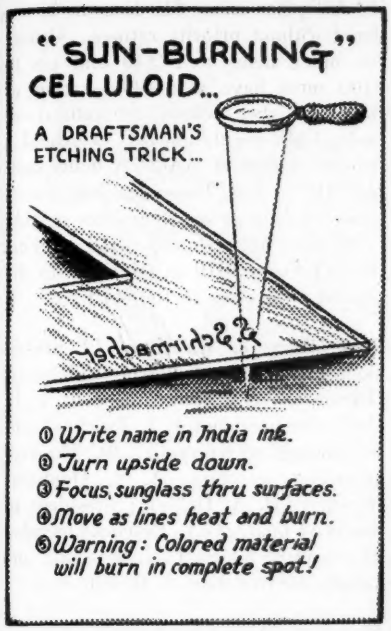
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BY *Stan Schirmacher*
UNION HIGH SCHOOL, TEMPE, ARIZONA

with intelligence in his work on the board. Therefore, in scheduling his shopwork during the three or four years he may spend at a vocational school too much time need not be taken from his main shop, the drafting room, to devote to these auxiliary interests.

If his school operates under the Smith-Hughes act he must schedule at least 15 hours of trade training per week. Of this, from three to four hours can be devoted to the minor shop activities outlined above without detracting too much time from his major training in drafting. In this short period an intensive course of work can be presented. The course of study for these minor shops should be designed on the premise that the young draftsman is there more for information than for training in trade skills. He should thus be subjected not so much to repetitive drills as to as many trade situations as possible. His work should be judged and marked on the same basis—not so much on the finish and workmanship of the job as the grasp of fundamental process shown.

In this kind of intensive training, films and film slides are of great value. The war-training programs have given these visual aids a tremendous impetus. There now exist many sound and silent films which deal with all phases of the work in the shops mentioned. A catalog from the Jam Handy Organization, for example, lists titles in machine-shop practice which give complete illustrations of elementary machining processes. However, in using these visual aids certain precautions must be exercised by the teacher. He must use them as he would any other instructional material. They should be explained beforehand, shown at the proper time, and tested in actual practice by the student.

Finally, the student draftsmen themselves must be sold on the idea of acquiring these auxiliary trade knowledges. After all, they are still youngsters for the most part with little or no experience in industrial life. Often one will grumble that he cannot see the sense of interrupting his drafting work to do some drilling and boring. I have found that one good form of motivation is to read to my class the want ads from the columns of the morning papers. These often indicate the requirement of specific auxiliary trade knowledge along with the drafting experience. Again instances from my own experiences help to give them the necessary receptive viewpoint. I recount to them, for instance, the occasion when I lost the chance of a good production job for which I had applied because I couldn't specify the proper coring and parting line for an intricate casting when examined for the position.

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Wheel Dresser *(from page 14)*

times advantageous to use two or more wheels with part of the angles or radii ground on each.

This tool may be used to grind radii on form tools having a clearance angle or front relief angle. Naturally if a tool having a given radius is to be ground and the tool is held in a fixture to produce the required angle, the radius on the top of the tool and the radius on the wheel will not be the same. Because of this the radius tool must be raised on one end enough to equal the clearance angle required on the tool. For example if a form tool with a ½" radius is to be ground with a front clearance angle of 5°, the radius dresser must be set to produce the ½" radius. It is then necessary to set the radius dresser to a 5° angle with the face of the chuck to produce the proper clearance.

This may be done by clamping the tool on an adjustable angle plate or it may be more accurately set with a sine plate and blocks.

You will find this an interesting project to make. Surface grinding need not be limited to flat work. By constructing this tool, a new field can be developed in any school shop.

news

WHAT'S DOING IN THE FIELD OF INDUSTRIAL EDUCATION

AT an executive conference of the American Industrial Arts Association held on May 29 at the Hotel Pennsylvania, New York City, new officers were selected for the coming year. Paul E. Harrison of DeKalb, Illinois, was elected president to succeed Everett J. McIntosh of Brookline, Massachusetts. Frank Moore of Cleveland, Ohio, was named vice-president to succeed Mr. Harrison and John J. Hatch remains as executive secretary and treasurer. The executive committee is to appoint a successor to William E. Warner as chairman of the Liaison and Advisory Board on the latter's resignation. An executive conference was held in lieu of a convention because of the problem of transportation.

USERS of visual aid materials and prospective users of such materials will be glad to learn that projection equipment, accessories, and parts are now available to essential civilian users under regulations which may not require the submission of WPB form 1319. Accessories and parts under $10 list can be ordered without priority ratings. Orders for other items over $10 and up to $100 must have a certified rating of AA-5 or higher. Schools are authorized, under CMP regulation 5A, to extend a priority rating of AA-2 on items costing $100 or less. Those desiring to purchase equipment or accessories costing more than $100 should make application on Form 1319 in triplicate to the nearest field office of the WPB.

NEW officers of Mu Sigma Pi, professional fraternity at Wayne University, Detroit, are as follows: president, E. R. Doll; vice-president, F. L. Zwickey; corresponding secretary, T. W. Hoover; recording secretary, A. S. Dunham; treasurer, H. A. DeLong; president of executive board, G. E. Peacock; member of executive board, C. L. Pozzini; and faculty adviser, Earl L. Bedell.

HONORING Alexander F. Victor, president of the Victor Animatograph Corp., on the 21st birthday of the 16mm film industry, a dinner and ceremonies were held on August 12 at Davenport, Iowa. The first offering of 16mm projectors and cameras to the public was made on August 12, 1923, by the Victor Corporation. Speakers at the "Coming of Age" celebration paid special tribute to Mr. Victor for his initiation of the struggle to establish a separate standard of film made from slow-burning or noninflammable materials for nontheatrical use.

A RECENT survey of 200 exservicemen by staff members of the Michigan State Board of Control for Vocational Education indicated that 57.5 percent wished further training of one sort or another. Of those desiring training, 34.1 percent wanted mechanical trade, electrical, or industrial training while 19.3 percent preferred technical and professional training.

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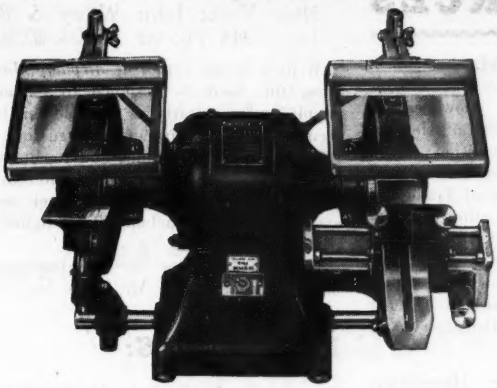

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BOOKS:

Aircraft Production Standards. Leavell, Bungay. New York: McGraw-Hill Book Co., 1943. Pp. ix + 264. $1.50.

The authors have tried to make available, in handy reference form, aircraft information and basic knowledge for use as a guide through the maze of complicated terms, expressions, and mechanical detail peculiar to the airplane industry. Concise information is given on blueprint reading, inspection, materials, assembly and installation methods, standard parts, manufacturers' standards. Reference tables and charts, index.

The Craftsman Prepares to Teach. Jackey, Barlow. New York: The Macmillan Company, 1944. Pp. viii + 184. $2.00.

Designed to help those who, with little or no teaching experience, are being asked today to train workers in many different industrial occupations, this book explains how to plan and organize subject matter to meet the desired objectives of the course and describes the basic technics of successful teaching. Six steps are given in the preparation of the course of study, each step illustrated with examples. The use of questions, demonstrations, recitation and discussion, experiment, shop work, tests, etc., is discussed, as are methods of creating and holding interest, allowance for individual differences, use of available materials as teaching aids, the supervision of shop work, and the preparation and grading of tests.

David F. Jackey is Supervisor of Trade and Industrial Teacher Training, California State Department of Education and Professor of Vocational Education, University of California, Los Angeles. Melvin L. Barlow is Assistant Supervisor of Trade and Industrial Teacher Training, California State Department of Education.

A Practical Course in Horology. Kelly. Peoria, Ill.: Manual Arts Press, 1944. Pp. 192. $2.75.

With mass production and improved manufacturing methods, the repairman's approach to horology has changed. This book presents the fundamentals of watch repair in theory and in practice. Part 1 deals with wheel work and gearing, involving the calculation of the number of teeth of missing wheels and pinions and their proper diameters. Part 2 discusses repair methods, and Part 3 concerns adjustments to isochronism, temperature, and position.

Harold C. Kelly has had more than 10 years' practical experience in watch repair work, has taught horology at the Bradley Polytechnic Institute, and is now head of the department of horology, Southwestern Institute of Technology, Weatherford, Okla.

Basic Airplane Mechanics. Lesley. New York: John Wiley & Sons, Inc., 1944. Pp. vii + 404. $2.50.

Written by the author of *Airplane Maintenance*, this book is designed to explain as simply and as clearly as possible the fundamental theory of airplane construction, with directions for maintenance and repair. Chapters on the theory of flight, materials and processes, controls, hydraulics, fuel and oil systems, etc., are included. 329 figures and illustrations. Index.

Hubert G. Lesley is superintendent of maintenance, Eastern Air Lines, Inc.

PAMPHLETS:

Opportunities for Youth in Air Transportation. Smith, Engelhardt. All the various phases of aviation, from the selling of tickets to the flying of the airplane, are discussed in this booklet. A short history of air transportation, methods of promotion of air travel, maintenance of the air liner, determining flight conditions, etc., are considered from the occupational outlook standpoint. Attractively made up and well illustrated, the booklet may be secured from Air-Age Education Research, 100 East 42nd Street, New York 17, N. Y. Please mention SCHOOL SHOP.

Mechanical Drawing Guide—Workbook. Smith, 878 Riverside, Bend, Oregon. Lithoprinted, 1944. Pp. 79. 65c. Prepared for students and teachers of mechanical drawing, this guide and workbook contains an individual check and progress chart, a weekly schedule, and 12

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Seaton H. Smith is instructor of mechanical drawing at the Junior and Senior High School, Bend, Oregon.

The Supervisor's Job in Industry. Baudek, Brooks. Bloomington, Ill.: McKnight & McKnight, 1944. Pp. 128. 80c. This pocket-size book succinctly outlines the supervisor's place in industry, the maintenance of a working staff, getting out production, and employer-employee relations—all four sections cleverly cartooned for your enjoyment. Various subjects taken up include: breaking in the new worker, responsibility to management and to the worker, incentives, safety, interdepartmental cooperation, standards of workmanship, care of equipment, labor relations administration, etc.

Anthony C. Baudek is Director of Training, McDonnel Aircraft Corp, and Mark L. Brooks is Director of Training, War Manpower Commission, both in St. Louis, Mo.

Operating an Engine Lathe. Lindenmeyer. Chicago: Science and Mechanics, 1944. Pp. 64. 50c. Practical lessons for the beginner in the operation of an engine lathe are given in this booklet, from a discussion of the lathe itself and the accessories to go with it to decimal equivalents, the vernier caliper, mounting work between centers, etc. There are 51 lessons in the book; 250 figures and illustrations. Check list of technical and practical books for home study.

Ray S. Lindenmeyer is Assistant Professor of Industrial Engineering at Northwestern Technological Institute.

VISUAL AIDS:

AA2 automatic priority ratings may again be used for photographic supplies and equipment costing less than $100. For such equipment costing more than this amount, however, form 1319 must be used; for equipment or supplies costing less than $10 no priority is necessary.

U.S. Office of Education Visual Training Aids lists all films on machine shop work, the slide rule, shipbuilding, aircraft work, etc. available from Castle Films, Inc. Prices of motion pictures and of filmstrips are given. For your copy, write, mentioning SCHOOL SHOP, to Castle Films, Inc., 30 Rockefeller Plaza, New York, N.Y.

The Inside of Atomic-Hydrogen Arc Welding is a 16mm sound film available free of charge or at print cost. Part I describes and illustrates the fundamentals; Part II shows proper technic for principal types of joints, how to recognize and correct improper welding conditions, with emphasis on current setting, speed of travel, size of arc, and contact of arc with work. Write Visual Instruction Section, General Electric Company, Schenectady, N.Y.

Welding Stainless Steel, a 16mm sound motion picture produced to aid in the teaching of welding students as well as those familiar with carbon-steel welding procedure, will be loaned to industrial schools and colleges free of charge. Send requests, accompanied by alternate dates for showing, to the Allegheny Ludlum Steel Corp., Brackenridge, Pa.

Aircraft Training Shop Blueprints are available from the U.S. Office of Education to assist schools in planning new shops. Plans have been developed for the following aviation departments: aircraft overhaul and maintenance building and shop, aircraft engine overhaul and maintenance shop, and engine run-up and test cells. Write the Federal Security Agency, U.S. Office of Education, Vocational Training for War Production Workers, Washington 25, D. C.

Home Electrical Appliances is a new Erpi Classroom Film which is designed to acquaint junior and senior high-school students with the basic scientific principles underlying the operation of common household electrical appliances. Animated drawings illustrate alternating currents throughout, and thermostatic controls, fluorescent lighting, electric refrigeration, and the maintenance and care of various items are discussed. Write, mentioning SCHOOL SHOP, to Encyclopaedia Britannica Films, Inc., 1841 Broadway, New York 23, N. Y.

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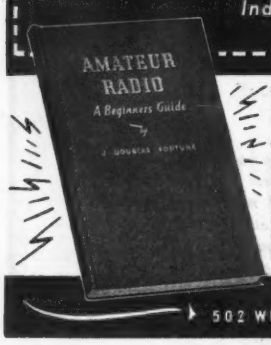

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WILLIAM D. BOUTWELL, former director of information services, U. S. Office of Education, has accepted a temporary assignment working on publications for the American Vocational Association beginning August 1 . . . Newly appointed Assistant Superintendent of Schools, Cleveland, Ohio, is JOHN E. FINTZ, former printing teacher and Directing Principal of Special Schools and Vocational Education in Cleveland. . . . ARTHUR E. HARLEY, founder of the department of printing at the Kansas City, Mo., Central High School and instructor of printing there for the last 24 years, retired from active duty on February 22, 1944. ALVIN E. LIMBAUGH succeeds him. . . . New editor-in-chief of the McCormick-Mathers Publishing Co., Wichita, Kans., is WALTER M. MASON, formerly with The Macmillan Co. . . . G. F. LIEBENDORFER has been appointed Nebraska State Director of Vocational Education, replacing SIDNEY OWEN, who resigned March 31, 1944 to accept a position with the U. S. Office of Education, Division of Visual Education. . . . JOHN H. TRYBOM, retired director of vocational education for the Detroit public schools, died at Phoenix, Arizona, April 28, 1944. Mr. Trybom is credited with organizing the entire vocational program of the Detroit public schools, having taken the directorship in 1900. . . . J. B. JEPPSON, former state director of vocational education for Nevada, is now vocational consultant, Veterans' Administration in Nevada. . . . HOMER C. ROSE is now head of instructor training at the U. S. Naval Air Training Base, Solomons Branch, Washington, D. C. . . . WORSLEY FARDY has gone from the Broadway School, Norwich, Conn., to the Maynard, Mass., High School, where he is teaching woodworking and metalworking. . . . For the past six years a shop instructor at the Sutter, Calif., Union High School, C. A. DOLL has accepted a position as instructor of wood shop at the Tamalpais High School, Mill Valley, Calif. . . . MARVIN GOLDBLATT, former teacher of auto mechanics at the Brooklyn, N. Y., High School of Auto Trades, is now a corporal in the Army Motor Transport Section and is teaching auto mechanics at Camp Crowder, Mo. . . . ROY F. SMITH is now teaching drawing at the Los Angeles, Calif., Wilson Senior High School.

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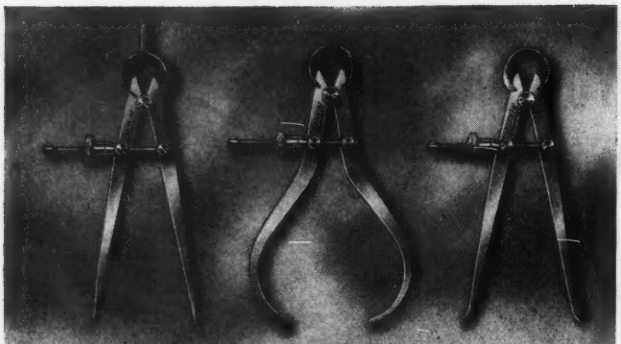

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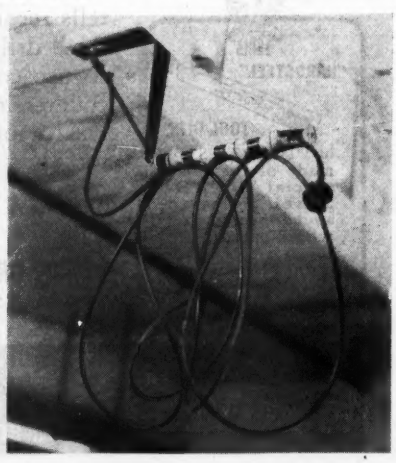

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the bill. The materials consist of two shelf brackets, some $10 fence wire, regular $14 electric cord, four upholstery spools, friction tape, and electrical plug and adapter. A small turnbuckle was placed at one end of the wire to take up the slack. A similar device could be used wherever cords for soldering irons, portable electric drills, or other equipment need to be kept out of the way.—*W. W. Dunbar, Charles W. Arnold Trade School, Haverhill, Mass.*

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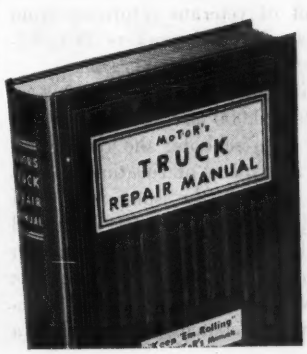

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from WASHINGTON by MICHAEL PACA

DISAPPOINTING is the word Washington officials are using to describe progress of the veterans education program, now being carried out under the G. I. Bill of Rights. And they are using it in three connections.

Disappointing in the fact that educational leadership has been by-passed in plans for its administration; disappointing in the unimaginative way the program has been run to date; disappointing in the lack of interest which exsoldiers themselves are showing so far in the training opportunities.

"The whole thing may be a wash-out," one Washington official sadly admits. "And yet, it can still be the greatest educational venture of the Nation, if educators act in time."

● It's hardly profitable to argue with a law; and the law assigns the veterans education program to the Veterans Administration, under Gen. Hines. Gen. Hines, in turn, has turned the program over to one of his able administrators, H. V. Stirling. But the question Washington is raising is: "Why are educational groups such as the Office of Education, the American Council on Education, and the American Vocation Association overlooked in the administration of this program?" To date, not even an advisory committee of educators has been appointed by Gen. Hines to guide the program, and no such committee will probably be set up.

In answer to the grumbling which educators are doing in Washington, the Veterans Administration silently points to the text of the law. The law says nothing about cooperating with any Washington educational groups; about encouraging veterans to go to school; about any plans to meet "educational deficits." The attitude of the VA, therefore, is: We will not get mixed up with educational philosophy or objectives. Our business is to administer the law as Congress wrote it.

And the law, as the VA reads it, says each veteran may go to school or not go to school as he wishes; select any approved institution; select any course he wishes; and attend as long or as briefly as he desires. The VA says it will be content with paying the school or college the "customary tuition fees" and paying the veteran the subsistence allowance authorized by law.

● Although more than 1,250,000 veterans are already eligible for the educational privileges, to date less than 300 are actually taking advantage of them. And yet the school benefits are the most generous and potentially the most valuable of all the rights the G. I. Bill provides.

Lack of exsoldiers' interest is explained officially by, "Veterans would rather try for those $100-a-week jobs than go to school." Yet, officials admit that they have done nothing to encourage veterans to return to school and have not said one official word to point out the importance of continuing the education of men who closed their books to go to war.

● Not Washington, but the local communities and the schools and colleges can save the program, one Veterans Administration official admitted. He pointed out that some three billion dollars of federal money is available for educational purposes. But this money is not an educational subsidy. It is a veterans subsidy. Therefore, if the funds are to be used for educational purposes, educators must make schooling so appealing and so attractive that veterans will want to return to school. That is this month's challenge from Washington to the Nation's educators.

● Congress is back in town and is talking "reconversion," but very little action will result from this talk until 1945. Still, Congress' reconversion mood bodes well for at least one important vocational education measure: the George-Dondero Bill (H. R. 5079), which calls for setting up area vocational schools. For the George-Dondero bill is definitely reconversion legislation. Its authors designed it as a bill to "provide vocational training and retraining programs for occupational adjustment and readjustment of veterans returning from military service and workers demobilized from war production. . . ."

The bill asks for $97,500,000, of which $24,000,000 are to be used for operating area schools; the remainder, to extend all aspects of vocational work. However, it isn't the sums requested which will cause the debates when and if the bill is brought up for discussion on the floor of Congress. The arguments will be whether Congress should sanction the much debated area school as a nation-wide institution. Lawmakers from rural areas will undoubtedly favor the area school, since it will serve the vocational educational needs of farm and rural youth. Best Washington opinion is that the area school is inevitable, but that Congress will need to be educated to the idea . . . and that will take time. Therefore, don't look for passage of the George-Dondero bill until the end of 1945 or later.

● The Latin scholar who said that nothing good comes from the dead has been proved wrong in New Deal Washington. The all-but-liquidated NYA did one last good turn for public schools. All NYA property used by public schools, and up to now technically on loan, now belongs to the schools outright. Title to the equipment was given the schools by Congress.

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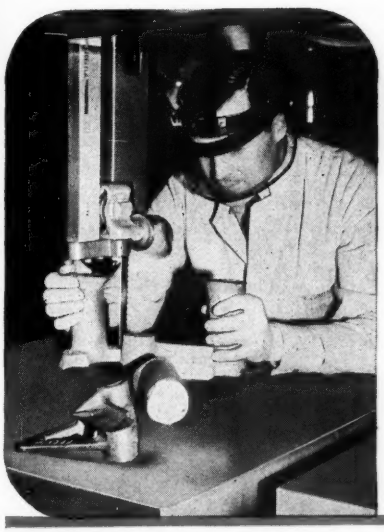

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